

Fig. 1

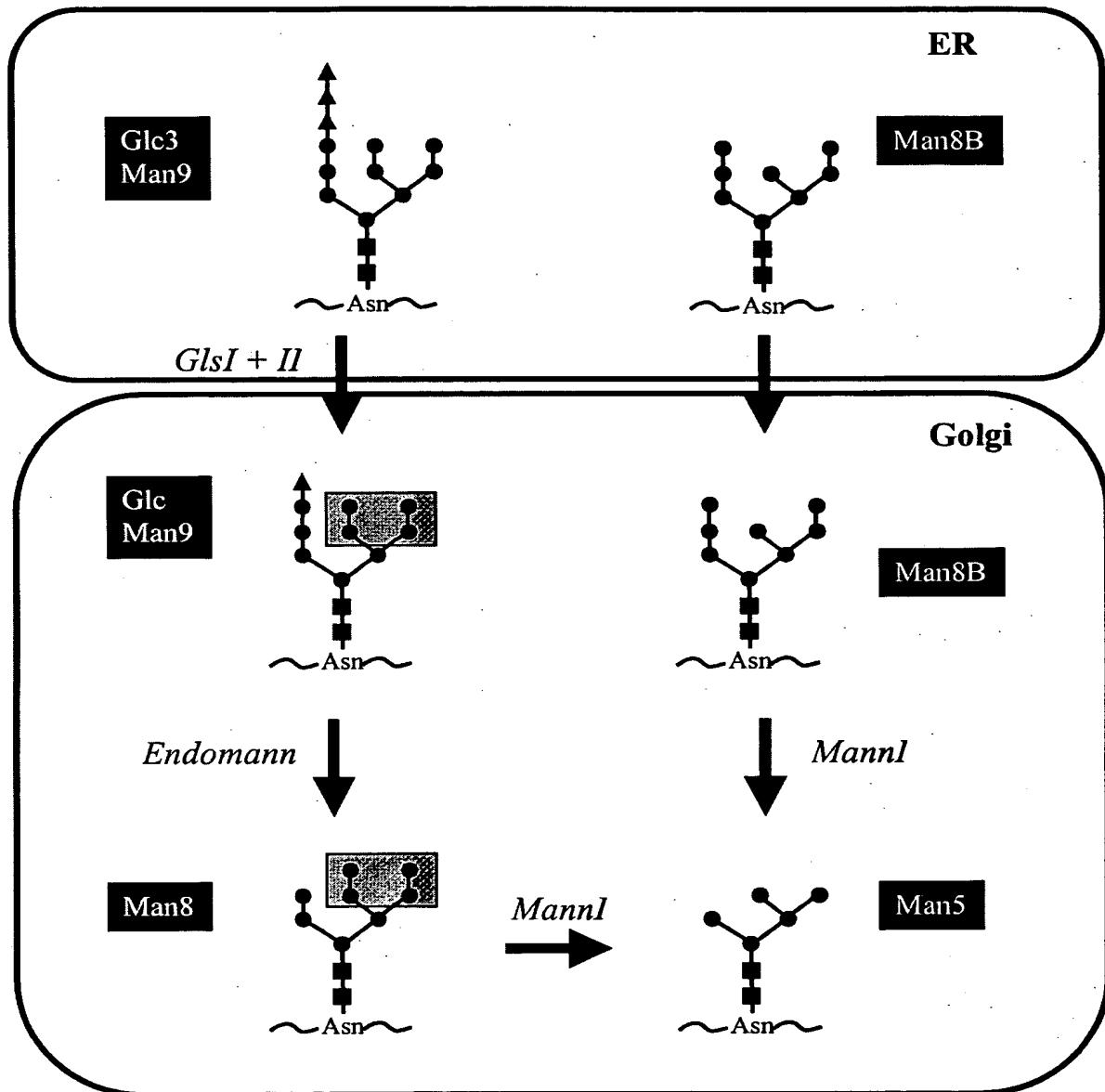


Fig. 2

**A**

>gi|20547442|ref|XP\_113472.1| (XM\_113472) hypothetical protein FLJ12838 [Homo sapiens]  
Length = 290

Score = 526 bits (1354), Expect = e-148  
Identities = 258/290 (88%), Positives = 276/290 (94%)

Query: 162 MKQMRSAISIGVLALSWYPPDASDENGEATDYLVPTILDKAHKYNLKVTFHIEPYSNRDDQ 221  
M+QMRSAISIGVLALSWYPPD +DENGE TD LVPTILDKAHKYNLKVTFHIEPYSNRDDQ  
Sbjct: 1 MRQMRSAISIGVLALSWYPPDVNDENGEPTDNLVPTILDKAHKYNLKVTFHIEPYSNRDDQ 60

Query: 222 NMHQNVKYIIDKYGNHPAFYRYKTRMGHSLPMFYIYDSYITKPKTWANLLTPSGSQSVRG 281  
NM++NVKYIIDKYGNHPAFYRYKT+ G++LPMFY+YDSYITKPK+ WANLLT SGS+S+R  
Sbjct: 61 NMYKNVKYIIDKYGNHPAFYRYKTGTGNALPMFYVYDSYITKPEKWNLLTSGSRSIRN 120

Query: 282 SPYDGLFIALLVEEKHKYDILQSGFDGIYTYFATNGFTYGSSHQNWKLFCEKNNMIF 341  
SPYDGLFIALLVEEKHKYDILQSGFDGIYTYFATNGFTYGSSHQN LK FC+K N+IF  
Sbjct: 121 SPYDGLFIALLVEEKHKYDILQSGFDGIYTYFATNGFTYGSSHQNWKLFCDKYNLIF 180

Query: 342 IPSVPGPYIDTSIRPWNTQTRNRRINGKYYEVGLSAALOTPSLISITSFNEWHEGTQIE 401  
IPSVPGPYIDTSIRPWNTQTRNRRINGKYYE+GLSAALQT+PSLISITSFNEWHEGTQIE  
Sbjct: 181 IPSVPGPYIDTSIRPWNTQTRNRRINGKYYEIGLSAALQTRPSLISITSFNEWHEGTQIE 240

Query: 402 KAVPKRTANTVYLDYRPHKPSLYEITRKWSEKYSKERMTYALDQQLPAS 451  
KAVPKRT-+NTVYLDYRPHK PLYE+TRKWSEKYSKER TYALD+QLP S  
Sbjct: 241 KAVPKRTSNTVYLDYRPHKGLYELTRKWSEKYSKERATYALDRQLPVS 290

**B**

>gi|18031878|gb|AAL07306.1| L (AY048774) mandaselin short form [Homo sapiens]  
Length = 195

Score = 49.7 bits (117), Expect = 9e-06  
Identities = 22/23 (95%), Positives = 23/23 (99%)

Query: 1 MRQMRSAISIGVLALSWYPPDVND 23  
MRQMRSAISIGVLALSWYPPDVN+  
Sbjct: 173 MRQMRSAISIGVLALSWYPPDVNE 195

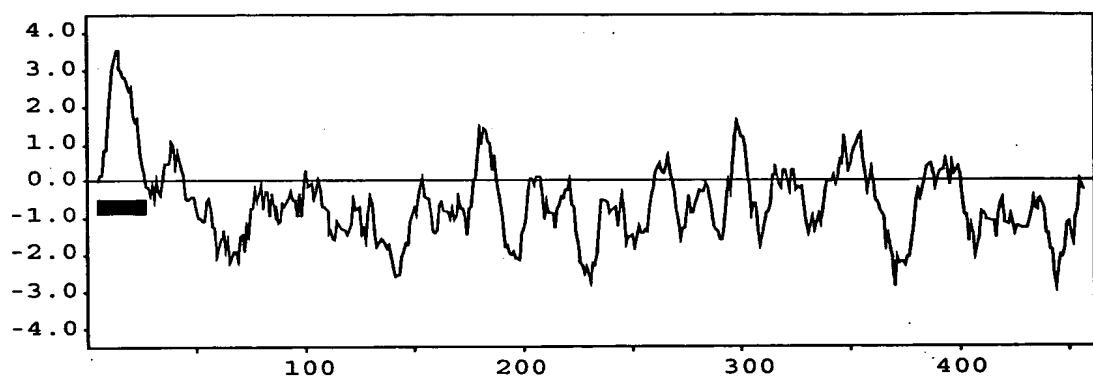
**C**

>gi|18031878|gb|AAL07306.1| mandaselin short form [Homo sapiens]  
MAKFRRRTCIIALFILFIFSLMMGLKMLRPNTATFGAPFGLDLLPELHQRTIHLGKNFDFQKSDRINSE  
TNTKNLKSVEITMKPSKASELNLDLPPLNNSYLHVFYYSWYGNPQFDGKYIHWNHPVLEHVDPRIAKNYP  
QGRHNPPDIGSSFYPELGSYSSRDPSEIETHMRQMRSAISIGVLALSWYPPDVNE

**Fig. 3**

1 ATGGCAAAGTTGGAGAAGGACTTGATCATTTGGCACTTTTATTCTATTCTCTGATGGTTAAAATGCTGAGACAAA  
 1 M A K F R R R T C I I L A L F I L F I F S L M M G L K M L R P N  
 96 TACAGCTACTTTGGAGCTCTTGGACTTGACCTTCTTCAGAACCTCATCAACGAACATTACATTGGGGAAAATTTGATTTCCAAAAGA  
 32 T A T F G A P F G L D L L P E L H Q R T I H L G K N F D F Q K  
 191 GTGACAGAACATCAACAGTGAACAAACAAATACCAAGAACATTAAAAAGTGTGAACATCACTATGAAACCTTCCAAAGCCTCTGAACCTTAACCTGGATGAA  
 64 S D R I N S E T N T K N L K S V E I T M K P S K A S E L N L D E  
 286 CTACACCTCTGAACAATTATCTACATGTATTATTACAGTGGTATGAAACATCCACAACTTGATGGTAAATATACATTGGAAATCATCCAGT  
 96 L P P L N N Y L H V F Y Y S W Y G N P Q F D G K Y I H W N H P V  
 381 GTTAGAGCATTGGGACCCCTAGAATAGCCAAGAACATTCCACAAAGGGAGACACAACCCCTCCAGATGACATTGGCTCCAGCTTTATCCTGAATTGG  
 127 L E H W D P R I A K N Y P Q G R H N P P D D I G S S F Y P E L  
 476 GAAAGTTACAGTTCTCGGGATCCTCTGTCAAGAACACTCACATGAGAACAAATGCGCTCAGCTTCAGCTTCAATTGGTGTACTAGCCCTCTCTT  
 159 G S Y S S R D P S V I E T H M R Q M R S A S I G V L A L S  
 563 GGTACCCACCTGATGTAATGATGAAATGGAGAACCTACTGATAACTTGGTACCCACTATTTGGATAAGCTCATAAAATATAACCTAAA  
 188 W Y P P D V N D E N G E P T D N L V P T I L D K A H K Y N L K  
 654 GTTACTTTACATAGAACCATATAGCAATCGAGATGATCAAAACATGTACAAAATGTCAGTATATTAGACAATATGGAAATCATCCGG  
 218 V T F H I E P Y S N R D D Q N M Y K N V K Y I I D K Y G N H P  
 749 CCTTTTACAGGTACAAGACGAAGACTGGCAATGCTCTCCTATGTTTATGTCATGATCCATATTACCAAGCCTGAAAATGGCCAATCTG  
 250 A F Y R Y K T K T G N A L P M F Y V Y D S Y I T K P E K W A N L  
 844 TTAACCACCTCAGGGTCTGGAGTATCGCAATTCTCCTTATGATGGACTGTTTATTGCCCTCTGGTAGAAGAAAACATAAGTATGATATTCT  
 282 L T T S G S R S I R N S P Y D G L F I A L L V E E K H K Y D I L  
 939 TCAAAGTGGTTTGATGAAATTACACATATTGCCACAAATGGCTTACTATGGCTCATCACATCAGAATTGGCTAGCCTAAATTAAATT  
 313 Q S G F D G I Y T Y F A T N G F T Y G S S H Q N W A S L K L I  
 1034 GTGATAAATACAACCTAATTATCCAAAGTGTGGCCAGGATACTAGATACCGCATCCGTCATGAAACACGCAAAACACTCGGAACCGA  
 345 C D K Y N L I F I P S V G P G Y I D T S I R P W N T Q N T R N R  
 1129 ATCAATGGGAAGTATTATGAAATTGGTCTGAGTGCCGCACCTCAGACACGCCAGCTTAATTCTATCACCTTTAATGAGTGGCATGAAGG  
 377 I N G K Y Y E I G L S A A L Q T R P S L I S I T S F N E W H E G  
 1224 AACTCAGATTGAAAAGCTGTTCCAAAAGAACCGTAATACAGTGTACCTAGATTACCGTCTCATAAACCAGGTCTTACCTAGAAACTGACTC  
 408 T Q I E K A V P K R T S N T V Y L D Y R P H K P G L Y L E L T  
 1319 GCAAGTGGTCTGAAAATACAGTAAGGAAAGAGCAACTTATGCATTAGATGCCAGCTGCCAGCTGCTGTTCTAA  
 440 R K W S E K Y S K E R A T Y A L D R Q L P V S

Fig. 4



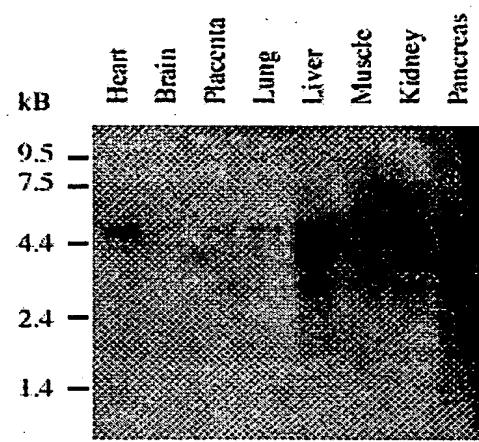
**Fig. 5**

1 ATGGCAAAATTCGAAGAAGGACCTGCATCCCTTGTCACTTTTATTCTATTATTTCTCTGATGATGGGCTTAAGATGCTGTGGCAA  
 1▶ M A K F R R R T C I L L S L F I L F I F S L M M G L K M L W P  
 95 ACGCAGCATCCTTGGACCTCTTGGACTTGACCTCCAGAACCTCATCCACTAAATGCGCATTGGAAACAAAGCTGACTTCAAAG  
 32▶ N A A S F G P P F G L D L L P E L H P L N A H S G N K A D F Q R  
 189 GAGTGTAGAATCAACATGGAAACAAACCCAAGGCTTAAAGGCCTGGCATGACTGTGCTGCCAGCCAAGCCTGAGGTGAACCTGGAA  
 63▶ S D R I N M E T N T K A L K G A G M T V L P A K A S E B V N L E  
 283 GAACTACCTCCCTGAAATTACTTTACATGCATTTATTACAGTTGGATGGAAATCCACAGTTGATGGTAAATATACACTGGAAATCATC  
 95▶ E L P P L N Y F L H A F Y Y S W Y G N P Q F D G K Y I H W N H  
 377 CGGTCTGGAACACTGGACCTCGGATAGCCAAGAACATAGTCTCCAGACGACATGGCTCCAGTTTATCTGAA  
 126▶ P V L E H W D P R I A K N Y P Q G Q H S P P D D I G S S F Y P E  
 471 GTTAGGAAGTTACAGCTCGAGACCCCTCTGTCTAGAAACTCACATGAAACAAATGCGCTCAGCCTCAATTGGAGTTCTGGCCCTGCTTGG  
 157▶ L G S Y S S R D P S V I E T H M K Q M R S A S I G V L A L S W  
 565 TACCCACCTGATCAAGGGATGACAATGGCGAAGCTACTGATCACTGGTCCACCATTTGGATAAGCTATAAAATAATCTGAAGGCTCA  
 189▶ Y P P D S R D D N G E A T D H L V P T I L D K A H K Y N L K V  
 659 CTTTCACATAGGCCATATAGCAATCGAGATGATCAAAACATGCATCAAATATCAAGTATAATTAGACAAATATGGAACCATCCAGCCTT  
 220▶ T F H I B P Y S N R D D Q N M H Q N I K Y I I D K Y G N H P A F  
 753 TTATAGATACAAGACCAGGACTGGCATTCTGCCCCATGTTTATGTCTATGATTCTTACATCACAAGCCTACAATATGGCCAATCTGTTA  
 251▶ Y R Y K T R T G H S L P M F Y V Y D S Y I T K P T I W A N L L  
 847 ACACCCCTCCGGATCTCAGAGTGTCCGAGTTCTCTTATGATGGATTGTTATTCAGACTAGTAGAAGAAAAGCATAAAAATGATATTCTTC  
 283▶ T P S G S Q S V R S S L Y D G L F I A L L V E E K H K N D I L  
 941 AGAGTGGTTTTGATGGTATTACACATATTTGCCACAAATGGCTTACATGGCTCATCTCATCAGAATTGGAATAACCTGAAATCCTTTG  
 314▶ Q S G F D G I Y T Y F A T N G F T Y G S S H Q N W N N L K S F C  
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 1129 GTCAATGGGAAGTATTATGAAGTGGCTAAAGTGTGCACTCCAGACCCACCCAGTTAATTCCATCACCTCTTCAATGAGTGGCATGAAG  
 377▶ V N G K Y Y E V G L S A A L Q T H P S L I S I T S F N E W H E  
 1223 GAACTCAAATTGAAAAGGCTGCCCCAAAGAACCTGCTAACACGATATACCTGGATTACCGCCCTCATAGCCAAGTCTTATCTAGAACTAAC  
 408▶ G T Q I E K A V P K R T A N T I Y L D Y R P H K P S L Y L E L T  
 1317 TCGAAAGTGGCTGAAAAATTCAAGTAAGGAAAGAATGACGTATGCATTGGATCAACAGCAGCCTGCTTCATAA  
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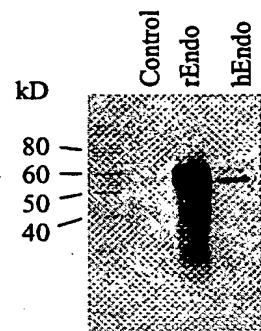
Fig. 6

1	MAK F R R R T C I I L A L F I L F I F S L M M G L K M L R P N T A T F G A P F	hEndo
1	MAK F R R R T C I I L S L F I L F I F S L M M G L K M L W P N A A S F G P P F	mEndo
1	----- M G A L M A T Y S E G M M G C S S V G R C F S S T L S P I I	rEndo
41	G L D L L P E L H Q R T I H L G K N F D F Q K S D R I N S E T N T K N L K S V E	hEndo
41	G L D L L P E L H P L N A H S G N K A D F Q R S D R I N M E T N T K A L K G A G	mEndo
31	T L - V A T S M K S T P R V L E N K A D F Q R S D R I D M E T N T K D L K G A G	rEndo
81	I T M K P S K A S E L N L D E L P P L N N Y L H V F Y Y S W Y G N P Q F D G K Y	hEndo
81	M T V L P A K A S E V N L E E L P P L N Y F L H A F Y Y S W Y G N P Q F D G K Y	mEndo
70	V T V H P P R A S E V N L E E L P P L N Y F V H A F Y Y S W Y G N P Q F D G K Y	rEndo
121	I H W N H P V L E H W D P R I A K N Y P Q G R H N P P D D I G S S F Y P E L G S	hEndo
121	I H W N H P V L E H W D P R I A K N Y P Q G O H S P P D D I G S S F Y P E L G S	mEndo
110	V H W N H P V L E H W D P R I A K N Y P Q G R H S P P D D I G S S F Y P E L G S	rEndo
161	Y S S R D P S V I E T H M R Q M R S A S I G V L A L S W Y P P D V N D E N G E P	hEndo
161	Y S S R D P S V I E T H M K Q M R S A S I G V L A L S W Y P P D S R D D N G E A	mEndo
150	Y S S R D P S V I E T H M K Q M R S A S I G V L A L S W Y P P D A S D E N G E A	rEndo
201	T D N L V P T I L D K A H K Y N L K V T F H I E P Y S N R D D Q N M Y K N V K Y	hEndo
201	T D H L V P T I L D K A H K Y N L K V T F H I E P Y S N R D D Q N M H Q N I K Y	mEndo
190	T D Y L V P T I L D K A H K Y N L K V T F H I E P Y S N R D D Q N M H Q N V K Y	rEndo
241	I I D K Y G N H P A F Y R Y K T K T G N A L P M F Y V Y D S Y I T K P E K W A N	hEndo
241	I I D K Y G N H P A F Y R Y K T R T G H S L P M F Y V Y D S Y I T K P T I W A N	mEndo
230	I I D K Y G N H P A F Y R Y K T R M G H S L P M F Y I Y D S Y I T K P K T W A N	rEndo
281	L L T T S G S R S I R N S P Y D G L F I A L L V E E K H K Y D I L Q S G F D G I	hEndo
281	L L T P S G S Q S V R S S L Y D G L F I A L L V E E K H K N D I L Q S G F D G I	mEndo
270	L L T P S G S Q S V R G S P Y D G L F I A L L V E E K H K Y D I L Q S G F D G I	rEndo
321	Y T Y F A T N G F T Y G S S H Q N W A S L K L I C D K Y N L I F I P S V G P G Y	hEndo
321	Y T Y F A T N G F T Y G S S H Q N W N N L K S F C E K N N L M I F I P S V G P G Y	mEndo
310	Y T Y F A T N G F T Y G S S H Q N W N K L K S F C E K N N M I F I P S V G P G Y	rEndo
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361	I D T S I R P W N T Q N T R N R V N G K Y Y E V G L S A A L Q T H P S L I S I T	mEndo
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390	S F N E W H E G T Q I E K A V P K R T A N T V Y L D Y R P H K P S L Y L E I T R	rEndo
441	K W S E K Y S K E R A T Y A L D R Q L P V S	hEndo
441	K W S E K F S K E R M T Y A L D Q Q Q P A S	mEndo
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Fig. 7



**Fig. 8**



**Fig. 9**

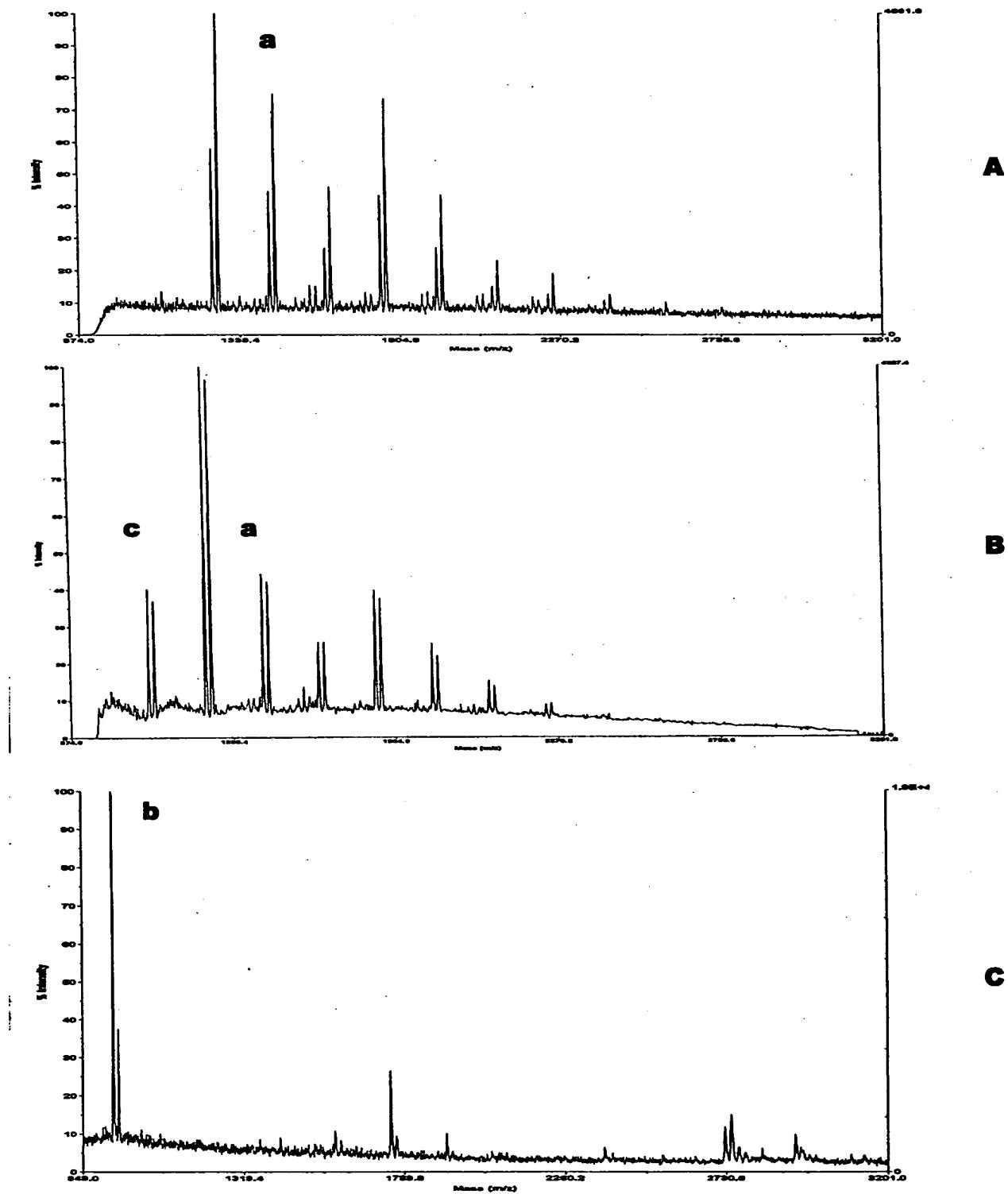


Fig. 10

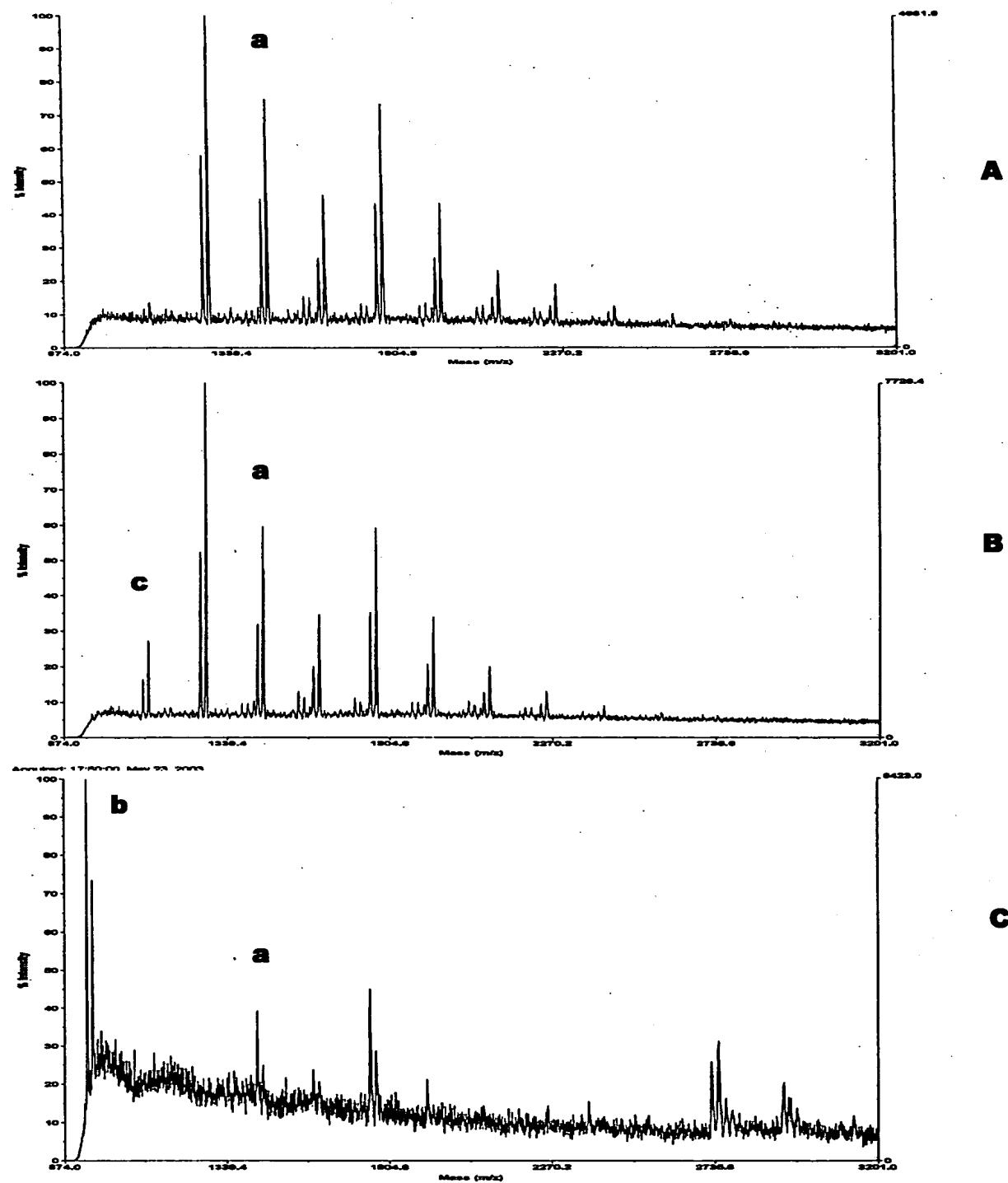


Fig. 11

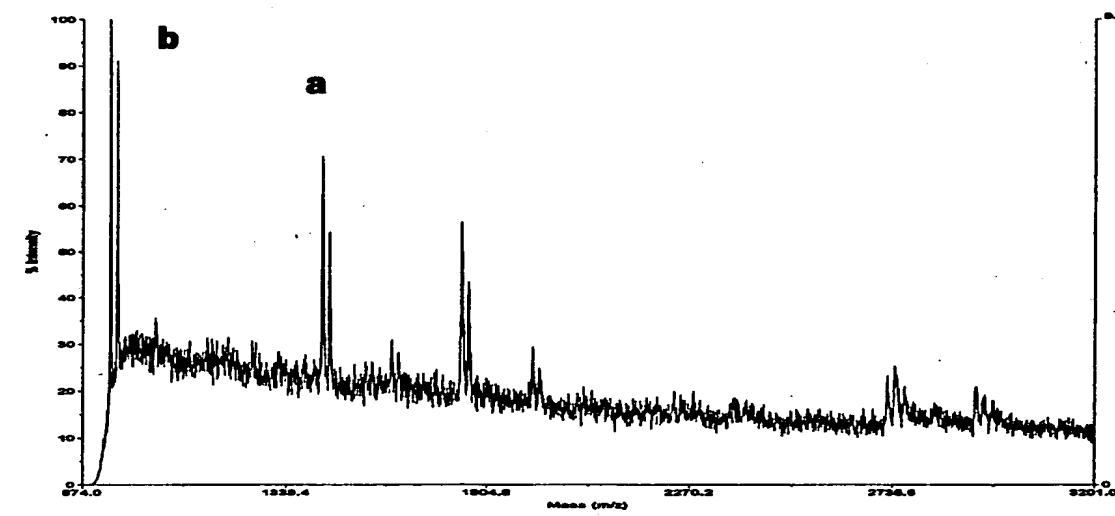
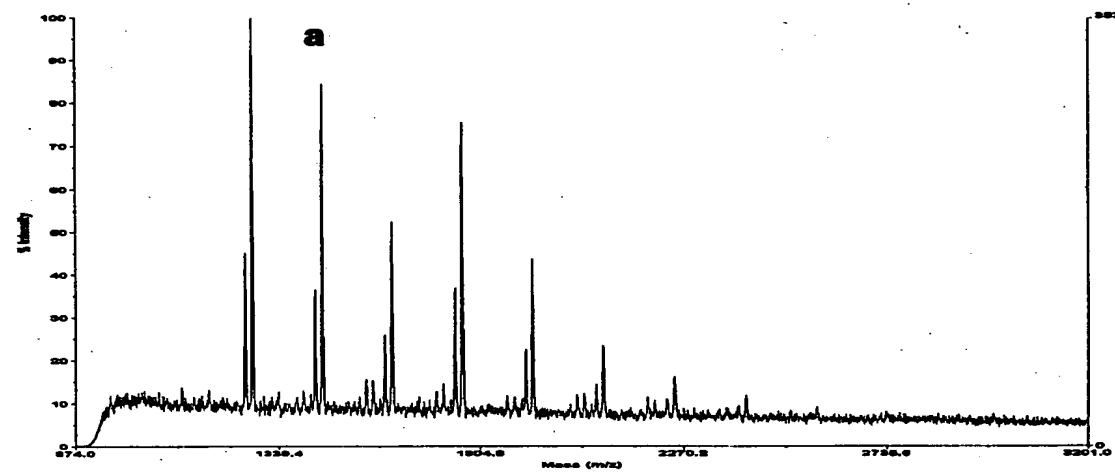
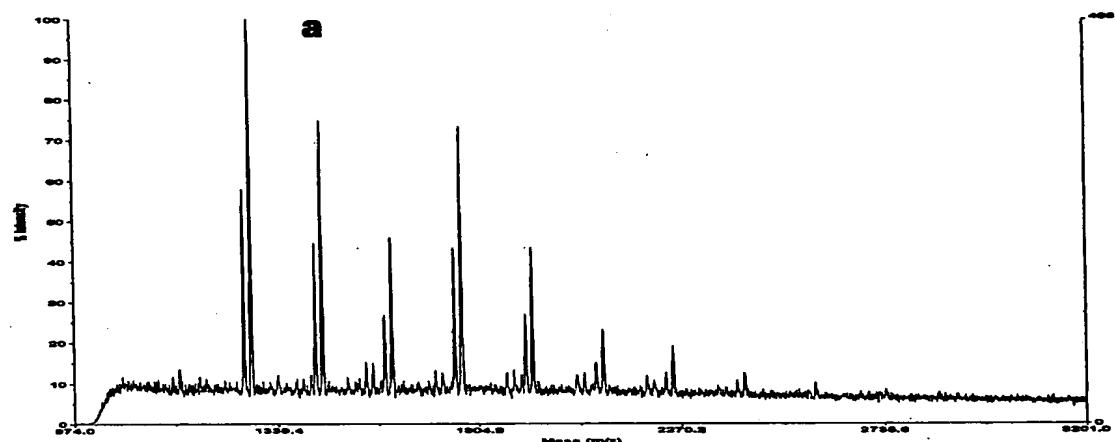
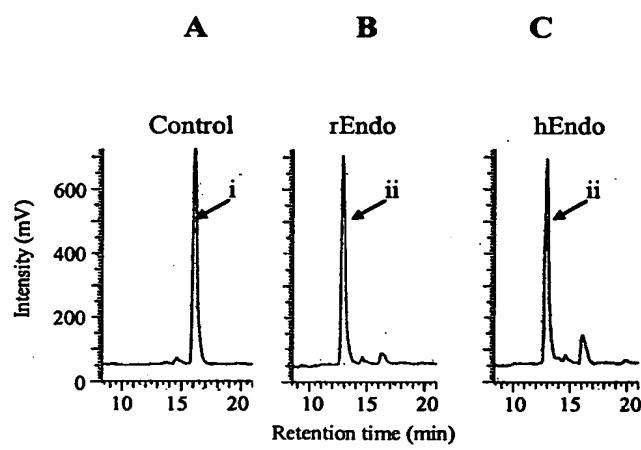
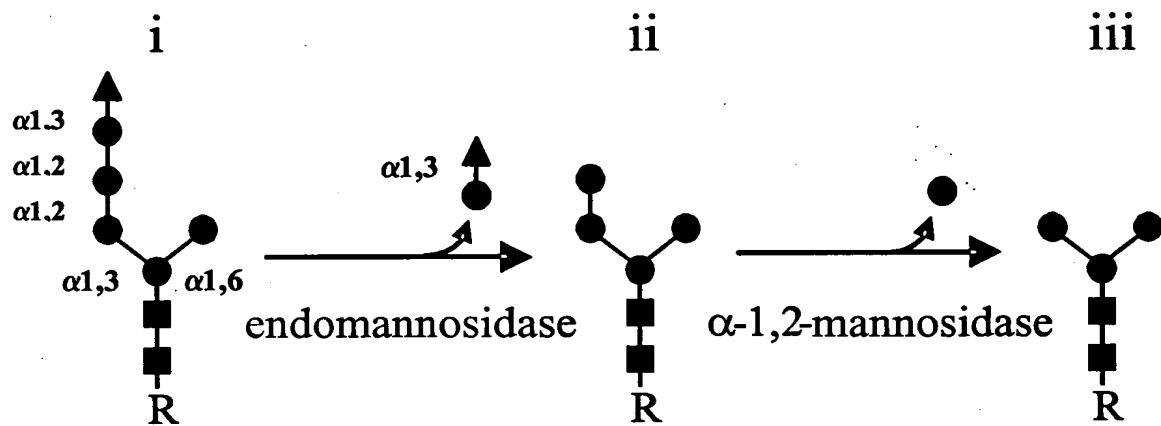


Fig. 12



**Fig. 13**



▲ — Glucose

● — Mannose

■ — GlcNAc

Fig. 14

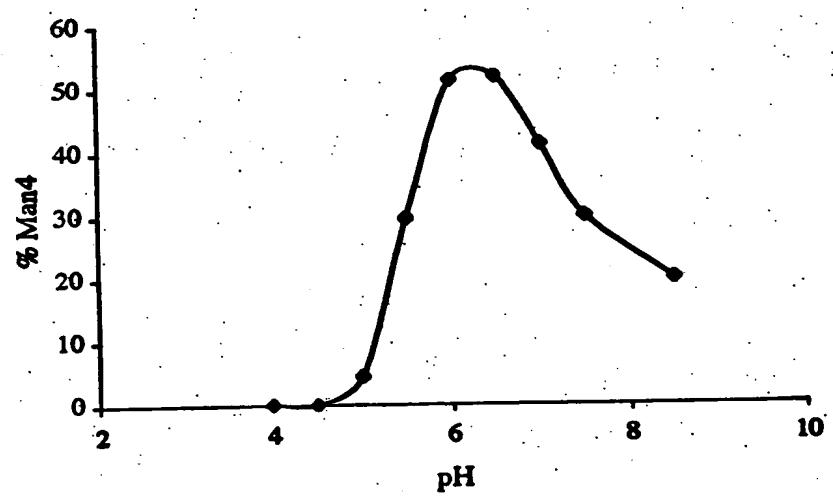


Fig. 15